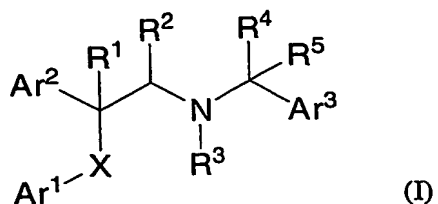


WHAT IS CLAIMED IS:

1. A compound of structural formula I:



- 5 or a pharmaceutically acceptable salt thereof, wherein:

R¹ is selected from:

- (1) hydrogen,
 (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents,
 (3) halogen, and
 10 (4) -OR^d;

R² is selected from:

- (1) hydrogen,
 (2) C₁₋₄alkyl, and
 (3) aryl,
 15 wherein each alkyl and aryl moiety is unsubstituted or substituted with 1, 2 or 3 R^e substituents ;

R³ is selected from:

- (1) hydrogen, and
 (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents;

R⁴ is selected from:

- 20 (1) hydrogen,
 (2) C₁₋₁₀alkyl,
 (3) C₂₋₁₀alkenyl,
 (4) C₂₋₁₀alkynyl,
 (5) C₁₋₁₀alkyloxycarbonyl-, and
 25 (6) C₃₋₁₀cycloalkyl,
 (7) aryl-C₁₋₆alkyl-, and
 (8) heteroaryl-C₁₋₆alkyl-,

- wherein each alkyl, alkenyl, and alkynyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^a and each aryl, heteroaryl, and cycloalkyl moiety is unsubstituted or substituted with one, two or three substituents independently selected from R^b and oxo;
 30

R⁵ is selected from:

- (1) hydrogen, and
- (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents;

Ar¹ is selected from:

- 5 (1) C₁₋₁₀alkyl,
- (2) C₂₋₁₀alkenyl,
- (3) C₂₋₁₀alkynyl,
- (4) C₃₋₁₀cycloalkyl,
- (5) cycloheteroalkyl,
- 10 (6) aryl, and
- (7) heteroaryl,

wherein each alkyl, alkenyl, and alkynyl moiety is unsubstituted or substituted with one to three substituents independently selected from R^a;

each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b; and

15 each cycloalkyl and cycloheteroalkyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b and oxo;

Ar² is selected from:

- 20 (1) -OR^d,
- (2) -CO₂R^d,
- (3) C₃₋₁₀cycloalkyl,
- (4) cycloheteroalkyl,
- (5) aryl, and
- (6) heteroaryl,

25 wherein each cycloalkyl, cycloheteroalkyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b and oxo; and each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b;

Ar³ is selected from:

- 30 (1) cycloalkyl,
- (2) aryl, and
- (3) heteroaryl,

wherein each cycloalkyl, aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b;

X is selected from:

- 35 (1) a bond,

- (2) C₁₋₄alkyl,
- (3) oxygen,
- (4) sulfur, and
- (5) -NR^c-,

5 provided that when X is oxygen, sulfur, or -NR^c-, then R¹ is hydrogen or C₁₋₄alkyl and Ar² is not -OR^d;

each R^a is independently selected from:

- (1) -OR^d,
- (2) -NR^cS(O)_mR^d,
- 10 (3) halogen,
- (4) -SR^d,
- (5) -S(O)_mR^d,
- (6) -S(O)_mNR^cR^d,
- (7) -NR^cR^d,
- 15 (8) -C(O)R^d,
- (9) -CO₂R^d,
- (10) -CN,
- (11) -C(O)NR^cR^d,
- (12) -NR^cC(O)R^d,
- 20 (13) -NR^cC(O)OR^d,
- (14) -NR^cC(O)NR^cR^d,
- (15) -CF₃,
- (16) -OCF₃, and
- (17) cycloheteroalkyl;

25 each R^b is independently selected from:

- (1) R^a,
- (2) C₁₋₁₀alkyl,
- (3) aryl,
- (4) arylC₁₋₄alkyl,
- 30 (5) heteroaryl, and
- (6) heteroarylC₁₋₄alkyl,

wherein aryl and heteroaryl moieties are unsubstituted or substituted with one, two or three substituents independently selected from R^f;

R^c and R^d are independently selected from:

- 35 (1) hydrogen,

- (2) C₁₋₁₀alkyl,
- (3) C₂₋₁₀alkenyl,
- (4) cycloalkyl,
- (5) cycloalkyl-C₁₋₁₀alkyl-,
- 5 (6) cycloheteroalkyl,
- (7) cycloheteroalkyl-C₁₋₁₀alkyl-,
- (8) aryl,
- (9) heteroaryl,
- (10) aryl-C₁₋₁₀alkyl-, and
- 10 (11) heteroaryl-C₁₋₁₀alkyl-, or

R^c and R^d together with the atom(s) to which they are attached form a heterocyclic ring of 4 to 7 members containing 0-2 additional heteroatoms independently selected from oxygen, sulfur and N-R_g, each R^c and R^d are unsubstituted or substituted with one to three substituents selected from R^h; R^e is selected from:

- 15 (1) hydroxy,
- (2) methoxy-,
- (3) trifluoromethoxy-,
- (4) methylcarbonyloxy-,
- (5) halogen, and
- 20 (6) cyano;

R^f is selected from:

- (1) halogen,
- (2) methyl,
- (3) cyano, and
- 25 (4) amino;

each R_g is independently selected from

- (1) C₁₋₁₀alkyl, and
- (2) -C(O)Rⁱ;

each R^h is independently selected from:

- 30 (1) halogen,
- (2) C₁₋₁₀alkyl,
- (3) -O-C₁₋₄alkyl,
- (4) -S-C₁₋₄alkyl,
- (5) -CN,
- 35 (6) -NO₂,

(7) -CF₃, and

(8) -OCF₃;

each R¹ is independently selected from:

(1) hydrogen,

(2) C₁₋₁₀alkyl,

(3) C₂₋₁₀ alkenyl,

(4) cycloalkyl,

(5) cycloalkyl-C₁₋₁₀alkyl-,

(6) cycloheteroalkyl,

(7) cycloheteroalkyl-C₁₋₁₀ alkyl-,

(8) aryl,

(9) heteroaryl,

(10) aryl-C₁₋₁₀alkyl-, and

(11) heteroaryl-C₁₋₁₀alkyl-; and

m is selected from 1 and 2.

2. The compound according to Claim 1, wherein:

X is selected from:

(1) a bond,

(2) -CH₂-,

(3) oxygen, and

(4) sulfur,

provided that when X is oxygen, or sulfur, then R¹ is hydrogen or C₁₋₄alkyl, and Ar² is not -OR^d;

each R^a is independently selected from:

(1) -OR^d,

(2) -NHS(O)₂R^d,

(3) halogen,

(4) -SR^d,

(5) -S(O)₂R^d

(6) -S(O)₂NR^cR^d,

(7) -NR^cR^d,

(8) -C(O)R^d,

(9) -CO₂R^d,

(10) -CN,

- (11) $-\text{C}(\text{O})\text{NR}^{\text{c}}\text{R}^{\text{d}}$,
- (12) $-\text{NHC}(\text{O})\text{R}^{\text{d}}$,
- (13) $-\text{NHC}(\text{O})\text{OR}^{\text{d}}$,
- (14) $-\text{NHC}(\text{O})\text{NR}^{\text{c}}\text{R}^{\text{d}}$,
- (15) $-\text{CF}_3$, and
- (16) $-\text{OCF}_3$;

each R^{b} is independently selected from:

- (1) R^{a} ,
- (2) C_{1-3} alkyl,
- (3) phenyl, and
- (4) heteroaryl,

wherein aryl and heteroaryl moieties are unsubstituted or substituted with one or two substituents independently selected from R^{f} ;

each R^{c} is selected from hydrogen and methyl, and each R^{d} is selected from:

- (1) hydrogen,
- (2) C_{1-6} alkyl,
- (3) cycloalkyl,
- (4) cycloalkyl- C_{1-3} alkyl-,
- (5) cycloheteroalkyl,
- (6) cycloheteroalkyl- C_{1-3} alkyl-,
- (7) phenyl,
- (8) pyridyl,
- (9) triazolyl,
- (10) pyrazolyl
- (11) phenyl- C_{1-3} alkyl-,
- (12) pyridyl- C_{1-3} alkyl-,
- (13) triazolyl- C_{1-3} alkyl-, and
- (14) pyrazolyl- C_{1-3} alkyl-,

wherein each R^{c} and R^{d} may be unsubstituted or substituted with one to three substituents selected from R^{h} ;

and pharmaceutically acceptable salts thereof.

3. The compound according to Claim 2, wherein: R^1 , R^3 and R^5 are each hydrogen; R^2 is selected from C_{1-4} alkyl and phenyl; and pharmaceutically acceptable salts thereof.

4. The compound according to Claim 3, wherein:

R⁴ is selected from:

- (1) C₁₋₆alkyl,
- (2) C₁₋₅alkyloxycarbonyl-, and
- 5 (3) C₃₋₆cycloalkyl,
- (4) aryl-C₁₋₃alkyl-, and
- (5) heteroaryl-C₁₋₃alkyl-,

wherein each alkyl moiety is unsubstituted or substituted with one to two substituents independently selected from R^a and each aryl, heteroaryl and cycloalkyl moiety is unsubstituted or substituted with a hydroxy or oxo substituent;

Ar¹ is selected from:

- (1) C₁₋₁₀alkyl,
- (2) C₃₋₁₀cycloalkyl,
- (3) cycloheteroalkyl,
- 15 (4) phenyl, and
- (5) heteroaryl,

wherein each alkyl moiety is unsubstituted or substituted with one to three substituents independently selected from R^a,

each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b, and

each cycloalkyl and cycloheteroalkyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b and oxo;

Ar² is selected from: aryl and heteroaryl, wherein aryl and heteroaryl are optionally substituted with one to four substituents independently selected from R^b;

and pharmaceutically acceptable salts thereof

5. The compound according to Claim 4, wherein: Ar³ is cyclohexyl or phenyl,

unsubstituted or substituted with one or two substituents selected from halogen, cyano, -CH₃, -OCH₃, -CF₃, -OCF₃, -CO₂CH₃, -SCH₃, -S(O)CH₃, -S(O)₂CH₃, -C(O)N(CH₃)₂, phenyl, pyridinyl, pyrimidinyl, pyrazolyl, pyrrolyl, triazolyl, -NH-R^d wherein phenyl and heteroaryl moieties are unsubstituted or substituted with a substituent selected from halogen, methyl, cyano and amino, and pharmaceutically acceptable salts thereof.

6. The compound according to Claim 5, wherein: R² is methyl, X is -CH₂-, Ar¹ is 4-

chlorophenyl, and Ar² is 3-cyanophenyl.

7. The compound according to Claim 1 selected from: 3-(1(S)-(4-chlorobenzyl)-2(S)-((2-hydroxy-2-methyl-1-phenylpropyl)amino)propyl)benzonitrile, methyl ((3-(4-chlorophenyl)-2(S)-(3-cyanophenyl)-1(S)-methyl-propyl)amino)(phenyl)acetate, 3-(1(S)-1-(4-chlorobenzyl)-2(S)-((2-hydroxy-1-phenylethyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((2-methoxy-1-phenylethyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-chlorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,5-difluorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)-benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2-chlorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)-benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-chlorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)-benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2,4-difluorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,4-difluorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2-chloro-4-fluorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2-fluoro-4-chlorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-fluorophenyl)-2-hydroxy-2-methyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-(((1-hydroxycyclobutyl)-(3,5-difluorophenyl)methyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-(((1-hydroxycyclohexyl)-(3,5-difluorophenyl)methyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,5-difluorophenyl)-2-hydroxy-2-ethyl-butyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,5-difluorophenyl)-2-hydroxy-2-methoxymethyl-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,5-difluorophenyl)-2-hydroxy-propyl)amino)propyl)-benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-3-hydroxy-2,2-dimethylpropyl)amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl)-2-acetyl-amino-propyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-t-butyloxycarbonylaminoethyl)-amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-aminoethyl)-amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-cyanoethyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-methylpropyl)amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,5-difluorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-methanesulfonylethyl)amino)propyl)benzonitrile, and pharmaceutically acceptable salts thereof.

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8. The compound according to Claim 1 selected from: 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-(1H-pyrazol-1-yl)ethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((2-methyl-1-phenyl-2-(1H-pyrazol-1-yl)propyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-phenyl-2-(1H-1,2,4-triazol-1-yl)ethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((2-oxopyridin-1(2H)-yl-1-phenyl-ethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-biphenyl-4-yl-2-cyanoethylamino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-

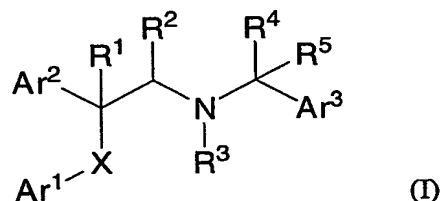
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((1-biphenyl-4-yl-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-bromophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-chlorophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-fluorophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-chlorophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-trifluoromethylphenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-trifluoromethylphenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methylphenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methoxycarbonylphenyl)-2-cyanoethyl) amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-trifluoromethoxyphenyl)-2-cyanoethyl) amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methylphenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2-chlorophenyl)-2-cyanoethyl) amino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,4-dichlorophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-cyanophenyl)-2-cyanoethyl) amino) propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-cyanophenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-cyclohexyl-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methylthiophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-cyanophenyl)-2-cyanoethyl) amino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methoxyphenyl)-2-cyanoethyl) amino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methylthiophenyl)-2-cyanoethyl) amino)propyl)benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-biphenyl-3-yl-2-cyanoethyl) amino)propyl)benzonitrile, 64523-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-dimethylaminocarbonylphenyl)-2-cyanoethyl) amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-dimethylaminocarbonylphenyl)-2-cyano-2-methylpropyl)amino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-pyrrol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-pyrazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-imidazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-chlorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile, 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-fluorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-chlorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-trifluoromethylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-trifluoromethylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methoxycarbonylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile

- (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-trifluoromethoxyphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-cyanophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile
- 5 (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3,4-dichlorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(2-chlorophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methylthiophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methoxyphenyl)-2-cyano-2-
- 10 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methylthiophenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-phenylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-bromophenyl)-2-cyano-2-
- 15 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-cyclohexyl-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-pyrazol-3-yl)phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-pyridin-4-yl-phenyl)-2-cyano-2-
- 20 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-pyridin-3-yl-phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4'-cyanobiphen-4-yl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-pyrimidin-5-yl-phenyl)-2-cyano-2-
- 25 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(2-fluoropyridin-4-yl)-phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4'-cyanobiphen-3-yl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-pyridin-3-yl-phenyl)-2-cyano-2-
- 30 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-pyrimidin-5-yl-phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-pyridin-4-yl-phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-pyrazol-3-yl)-phenyl)-2-cyano-2-
- 35 methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3'-cyanobiphen-3-yl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methanesulfonylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-methanesulfinylphenyl)-2-cyano-2-
- methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methanesulfonylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-methanesulfinylphenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile

(diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-1,2,4-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl) amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-1,2,5-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-1,2,3-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino)propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-1,2,4-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-1,2,5-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-1,2,3-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-pyrazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-pyrazol-3-ylamino)phenyl)-2-cyano-2-methylpropyl)amino)propyl) benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(1H-1,2,4-triazol-3-ylamino)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(4-(3-amino-1H-1,2,4-triazol-1-yl)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-pyrazol-3-ylamino)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(1H-1,2,4-triazol-3-ylamino)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), 3-(1(S)-(4-chlorobenzyl)-2(S)-((1-(3-(pyridine-2-ylamino)phenyl)-2-cyano-2-methylpropyl)amino) propyl)benzonitrile (diastereomer A), and pharmaceutically acceptable salts thereof.

9. A compound of structural formula I:



or a pharmaceutically acceptable salt thereof, wherein:

25 R¹ is selected from:

- (1) hydrogen,
- (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents,
- (3) halogen, and
- (4) -OR^d;

30 R² is selected from:

- (1) hydrogen,

(2) C₁₋₄alkyl, and

(3) aryl,

wherein each alkyl and aryl moiety is unsubstituted or substituted with 1, 2 or 3 R^e substituents;

R³ is selected from:

- 5 (1) hydrogen, and
 (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents;

R⁴ is selected from:

- 10 (1) hydrogen,
 (2) C₁₋₁₀alkyl,
 (3) C₂₋₁₀alkenyl,
 (4) C₂₋₁₀alkynyl,
 (5) C₁₋₁₀alkyloxycarbonyl-, and
 (6) C₃₋₁₀cycloalkyl,

15 wherein each alkyl, alkenyl, and alkynyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^a and each cycloalkyl moiety is unsubstituted or substituted with one, two or three substituents independently selected from R^b;

R⁵ is selected from:

- (1) hydrogen, and
 (2) C₁₋₄alkyl, unsubstituted or substituted with 1, 2 or 3 R^e substituents;

20 Ar¹ is selected from:

- (1) C₁₋₁₀alkyl,
 (2) C₂₋₁₀alkenyl,
 (3) C₂₋₁₀alkynyl,
 (4) C₃₋₁₀cycloalkyl,
25 (5) cycloheteroalkyl,
 (6) aryl, and
 (7) heteroaryl,

 wherein each alkyl, alkenyl, and alkynyl moiety is unsubstituted or substituted with one to three substituents independently selected from R^a,

30 each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b, and

 each cycloalkyl and cycloheteroalkyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b and oxo;

Ar² is selected from:

- 35 (1) -OR^d,

- (2) $-\text{CO}_2\text{R}^d$,
- (3) C_{3-10} cycloalkyl,
- (4) cycloheteroalkyl,
- (5) aryl, and
- (6) heteroaryl,

wherein each cycloalkyl, cycloheteroalkyl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b and oxo; and each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b ;

Ar^3 is selected from:

- (1) aryl, and
- (2) heteroaryl,

wherein each aryl and heteroaryl moiety is unsubstituted or substituted with one to four substituents independently selected from R^b ;

X is selected from:

- (1) a bond,
- (2) C_{1-4} alkyl,
- (3) oxygen,
- (4) sulfur, and
- (5) $-\text{NRC}-$,

provided that when X is oxygen, sulfur, or $-\text{NRC}-$, then R^1 is hydrogen or C_{1-4} alkyl and Ar^2 is not $-\text{OR}^d$;

each R^a is independently selected from:

- (1) $-\text{OR}^d$,
- (2) $-\text{NRC}^c\text{S(O)}_m\text{R}^d$,
- (3) halogen,
- (4) $-\text{SR}^d$,
- (5) $-\text{S(O)}_m\text{R}^d$,
- (6) $-\text{S(O)}_m\text{NRC}^c\text{R}^d$,
- (7) $-\text{NRC}^c\text{R}^d$,
- (8) $-\text{C(O)}\text{R}^d$,
- (9) $-\text{CO}_2\text{R}^d$,
- (10) $-\text{CN}$,
- (11) $-\text{C(O)}\text{NRC}^c\text{R}^d$,
- (12) $-\text{NRC}^c\text{C(O)}\text{R}^d$,
- (13) $-\text{NRC}^c\text{C(O)}\text{OR}^d$,

(14) $\text{-NR}^c\text{C}(\text{O})\text{NR}^d\text{R}^d$,

(15) -CF_3 ,

(16) -OCF_3 , and

(17) cycloheteroalkyl;

5 each R^b is independently selected from:

(1) R^a ,

(2) C_{1-10} alkyl,

(3) aryl,

(4) aryl C_{1-4} alkyl,

10 (5) heteroaryl, and

(6) heteroaryl C_{1-4} alkyl;

R^c and R^d are independently selected from:

(1) hydrogen,

(2) C_{1-10} alkyl,

15 (3) C_{2-10} alkenyl,

(4) cycloalkyl,

(5) cycloalkyl- C_{1-10} alkyl-,

(6) cycloheteroalkyl,

(7) cycloheteroalkyl- C_{1-10} alkyl-,

20 (8) aryl,

(9) heteroaryl,

(10) aryl- C_{1-10} alkyl-, and

(11) heteroaryl- C_{1-10} alkyl-, or

25 R^c and R^d together with the atom(s) to which they are attached form a heterocyclic ring of 4 to 7 members containing 0-2 additional heteroatoms independently selected from oxygen, sulfur and N- R^g , each R^c and R^d are unsubstituted or substituted with one to three substituents selected from R^h ;

R^e is selected from:

(1) hydroxy,

(2) methoxy-,

30 (3) trifluoromethoxy-,

(4) methylcarbonyloxy-,

(5) halogen, and

(6) cyano;

each R^g is independently selected from

35 (1) C_{1-10} alkyl, and

(2) $-C(O)R^i$;

each R^h is independently selected from:

- (1) halogen,
- (2) C_{1-10} alkyl,
- 5 (3) $-O-C_{1-4}$ alkyl,
- (4) $-S-C_{1-4}$ alkyl,
- (5) $-CN$,
- (6) $-NO_2$,
- (7) $-CF_3$, and
- 10 (8) $-OCF_3$;

each R^i is independently selected from:

- (1) hydrogen,
- (2) C_{1-10} alkyl,
- (3) C_{2-10} alkenyl,
- 15 (4) cycloalkyl,
- (5) cycloalkyl- C_{1-10} alkyl-,
- (6) cycloheteroalkyl,
- (7) cycloheteroalkyl- C_{1-10} alkyl-,
- (8) aryl,
- 20 (9) heteroaryl,
- (10) aryl- C_{1-10} alkyl-, and
- (11) heteroaryl- C_{1-10} alkyl-; and

m is selected from 1 and 2.

25 10. A composition comprising a compound according to Claim 1 and a pharmaceutically acceptable carrier.

30 11. The use of a compound according to Claim 1, for the manufacture of a medicament useful for the treatment of a disease mediated by the Cannabinoid-1 receptor in a human patient in need of such treatment.

35 12. The use according to Claim 11 wherein the disease mediated by the Cannabinoid-1 receptor is selected from: psychosis, memory deficit, cognitive disorders, migraine, neuropathy, neuro-inflammatory disorders, cerebral vascular accidents, head trauma, anxiety disorders, stress, epilepsy, Parkinson's disease, schizophrenia, substance abuse disorders, constipation, chronic intestinal pseudo-

obstruction, cirrhosis of the liver, asthma, obesity, and other eating disorders associated with excessive food intake.

13. The use according to Claim 12 wherein the disease mediated by the Cannabinoid-1
5 receptor is selected from obesity, bulimia nervosa, and compulsive eating disorders.

14. The use according to Claim 13 wherein the eating disorder associated with excessive food intake is obesity.

10 15. The use of a compound according to Claim 1 for the manufacture of a medicament for the prevention of obesity in a person at risk therefor.